

ABSTRACT OF THE DISCLOSURE

A radiation detection device, system, and method for use in homeland security is disclosed. The device is portable and includes a photomultiplier tube (PMT) connected to an end of a substantially rigid thin-walled aluminum tube. Inside the aluminum tube, a substantially straight scintillating fiber is disposed (so as to be shielded from ambient light), and an end of the scintillating fiber is optically coupled to the PMT. A voltage output signal from the PMT is signal-processed with a filter to remove high-frequency noise (which may arise from solar radiation spikes) and fed to a voltage-responsive alarm or signalling device. The portable device is employed, for example, in baggage and vehicle radiation scanning systems, as well as for large-area radiation mapping and directional radiation sensing.